CLEAN VERSION OF AMENDED CLAIMS

1.(Twice Amended) An analytical method for analyzing a liquid sample using near infrared spectroscopy comprising the steps of:

(a) applying near infrared light in a short wavelength range to the liquid sample as disposed within a sample test tube from outside the sample test tube;

(b) detecting at least one of diffusely reflected light, diffusely transmitted light, and transmitted and reflected light from the liquid sample by an optical sensor to measure a near infrared absorption spectrum of the liquid sample; and

(c) comparing the measured spectrum value to a value obtained from a calibration equation which has been determined in advance, thereby determining object characteristics of the liquid sample,

wherein said calibration equation is determined from a near infrared absorption spectrum of a liquid reference sample with known object characteristics, which liquid reference sample is disposed within a plurality of test tubes having substantially the same optical specifications as said sample test tube.

4.(Twice Amended) The analytical method for analyzing a liquid sample using near infrared spectroscopy according to claim 1, wherein a plurality of ordinary test tubes with substantially the same optical specifications are used interchangeably as the test tubes in the spectrum measurement of the reference sample in determining the calibration equation.

5.(Twice Amended) An analytical apparatus for analyzing a liquid sample comprising:

a plurality of interchangeable test tubes;

a block provided with a housing portion which receives one of said test tubes containing the liquid sample therein;

a near infrared apparatus provided with a spectroscope for dispersing near infrared light in a short wavelength range from a source of light or the sample and an optical sensor for detecting the near infrared light;

light conduction means for conducting the dispersed near infrared light to the test tube within the housing portion and for conducting, directly or through the spectroscope, at least one of diffusely reflected light, diffusely transmitted light, and transmitted and reflected light from the liquid sample within the test tube to the optical sensor; and

control means for outputting a measurement command of a spectrum to the near infrared apparatus and for modifying the measured spectrum using a calibration equation which has been determined in advance, for thereby computing an object characteristics of the liquid sample.

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9. (Twice Amended) The analytical apparatus for analyzing a liquid sample according to claim 5, wherein the block is provided with a temperature control means for stabilizing the liquid sample within the test tube at a predetermined temperature.

10. (Amended) The analytical apparatus for analyzing a liquid sample according to claim 5, wherein the test tubes are ordinary test tubes

11. (Amended) The analytical apparatus for analyzing a liquid sample according to claim 5, wherein said calibration equation is determined in advance from a near infrared spectrum measured by the analytical apparatus using a liquid reference sample with known object characteristics, and with the liquid reference sample disposed in a plurality of the test tubes.

12. (Amended) The analytical apparatus for analyzing a liquid sample according to claim 11, wherein ordinary test tubes with the same specifications are used as the test tubes in the spectrum measurement of the liquid reference sample.

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14. (Amended) The analytical method for analyzing a liquid sample using near infrared spectroscopy according to claim 1, wherein the sample test tube and the plurality of test tubes having substantially the same optical specifications as the sample test tube are ordinary test tubes.

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NEW CLAIMS 15-20

15. (New) The analytical method for analyzing a liquid sample using near infrared spectroscopy according to claim 1, wherein the calibration equation is determined from the near infrared spectrum of a plurality of liquid reference samples with known object characteristics, which are disposed in the plurality of test tubes, and wherein said spectrum is measured using said steps (a) and (b) relative to the liquid reference samples.

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16. (New) The analytical method for analyzing a liquid sample using near infrared spectroscopy according to claim 1, wherein said liquid sample is an unmodified field sample .

17. (New) The analytical apparatus for analyzing a liquid sample according to claim 5, wherein the liquid sample is an unmodified field sample.

18. (New) The analytical method for analyzing a liquid sample using near infrared spectroscopy according to claim 1, wherein the short wavelength range is 1-2 cm.

19. (New) The analytical apparatus for analyzing a liquid sample according to claim 5, wherein the short wavelength range is 1-2 cm.